Please add the following claims:

36. The system of Claim 11, further comprising a synthesis and purge component in a pressurizable chamber, wherein said synthesis and purge component comprises said cartridge, and wherein said seal between said at least one receiving hole and said nucleic acid synthesis column is configured so as to maintain pressure in said chamber during a purging operation to purge liquid reagent from said synthesis column.

37. The system of Claim 36, wherein said cartridge comprises a plurality of receiving holes.

38. The system of Claim 37, wherein each of said plurality of receiving holes comprises an O-ring.

39. The system of Claim 37, wherein said cartridge is configured to hold 12 or more nucleic acid synthesis columns.

40. The system of Claim 37, wherein said cartridge is configured to hold 48 or more nucleic acid synthesis columns.

41. The system of Claim 36, further comprising a reagent dispensing station, wherein said reagent dispensing station is configured to house one or more reagent reservoirs, such that reagents in said reagent reservoirs can be delivered to said cartridge.

42. The system of Claim 41, wherein said reagent dispensing station comprises a ventilation tube configured to remove gaseous emissions from said reagent dispensing station.

43. The system of Claim 42, wherein said reagent dispensing station comprises an enclosure.

44. The system of Claim 43, wherein said reagent dispensing station comprises a viewing window configured to allow visual inspection of reagent reservoirs without opening said enclosure.

REMARKS

Claims 1-35 were in the Application as filed. The Examiner has made a restriction requirement, restricting the Claims into three groups, with Group I comprising Claims 1-16; Group II comprising Claims 17-25 and 33-35; and Group III comprising Claims 26-32.

The Examiner has characterized Group I Claims as being drawn to a cartridge for use in an open nucleic acid synthesis system and a system comprising an open nucleic acid synthesis cartridge. Group II Claims are characterized as being drawn to a nucleic acid synthesis system and a method of synthesis comprising a synthesis and purge component. The Applicant notes that Claims 22-25 of Group II depend from Claim 2 of Group I, and are drawn to a system comprising an open nucleic acid synthesis cartridge. Applicant believes that the Examiner intends that these Claims be included in Group I, such that Group I comprises Claims 1-16 and 22-25.

To further business interests, Applicant has elected the Claims in Group I, *i.e.*, Claims 1-16 and 22-25, without traverse. Claims 17-21 and 26-35 are cancelled herein without prejudice in view of the present restriction requirement. Applicant reserves the right to prosecute these claims in one or more Divisional Applications.

Claims 36-44 have been added. New claims 36-44 depend from an existing Group I Claim, and are drawn to a system comprising an open nucleic acid synthesis cartridge, consistent with the elected invention. Support for these claims is found throughout the Application. For the Examiner's convenience, a copy of the entire set of pending claims is attached at Appendix I.

CONCLUSION

If a telephone interview would aid in the prosecution of this application, Applicant encourages the Examiner to call the undersigned collect at (608) 218-6900.

Dated: August 5, 2002

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APPENDIX I
COMPLETE SET OF PENDING CLAIMS

We Claim:

1. A cartridge for use in an open nucleic acid synthesis system, said cartridge comprising a plurality of receiving holes configured to hold nucleic acid synthesis columns, wherein said cartridge is further configured to receive one or more O-rings, wherein the presence of said one or more O-rings provides a seal between said nucleic acid synthesis columns and said plurality of receiving holes.

2. A nucleic acid synthesis system containing the cartridge of Claim 1.

3. The cartridge of Claim 1, wherein said plurality of receiving holes comprises 12 or more receiving holes.

4. The cartridge of Claim 1, wherein said plurality of receiving holes comprises 48 or more receiving holes.

5. The cartridge of Claim 1, wherein said cartridge is configured to receive a gasket, wherein said gasket provides said one or more O-rings.

6. The cartridge of Claim 1, wherein said plurality of receiving holes comprise an upper portion and a lower portion, wherein said lower portion comprises a first diameter and said upper portion comprises a second diameter that is larger than said first diameter.

7. The cartridge of Claim 1, wherein said plurality of receiving holes comprise an upper portion with a first diameter, a middle portion with a second diameter, and a lower portion with a third diameter, wherein said second diameter is larger than said first diameter and larger than said third diameter.

8. The cartridge of Claim 7, wherein said middle portion is configured to hold an O-ring such that, when present, said O-ring contains an internal diameter less than said first diameter and less than said third diameter.

9. A system comprising an open-system nucleic acid synthesis cartridge, said cartridge comprising at least one receiving hole configured to receive a nucleic acid synthesis column, said at least one receiving hole comprising an O-ring.

10. The system of Claim 9, wherein said open-system nucleic acid synthesis cartridge comprises a rotary cartridge.

11. The system of Claim 9, wherein said O-ring is configured to form a substantially airtight seal between said at least one receiving hole and said nucleic acid synthesis column, when said nucleic acid synthesis column is present.

12. The system of Claim 9, wherein said O-ring is configured to form an airtight seal between said at least one receiving hole and said nucleic acid synthesis column, when said nucleic acid synthesis column is present.

13. The system of Claim 9, wherein said cartridge comprises a plurality of receiving holes.

14. The system of Claim 13, wherein each of said plurality of receiving holes comprises an O-ring.

15. The system of Claim 13, wherein said cartridge comprises 12 or more receiving holes.

16. The system of Claim 13, wherein said cartridge comprises 48 or more receiving holes.

22. The nucleic acid synthesis system of Claim 2, further comprising a reagent dispensing station, wherein said reagent dispensing station is configured to house one or more reagent reservoirs, such that reagents in said reagent reservoirs can be delivered to said cartridge.

23. The system of Claim 22, wherein said reagent dispensing station comprises a ventilation tube configured to remove gaseous emissions from said reagent dispensing station.

24. The system of Claim 22, wherein said reagent dispensing station comprises an enclosure.

25. The system of Claim 24, wherein said reagent dispensing station comprises a viewing window configured to allow visual inspection of reagent reservoirs without opening said enclosure.

36. The system of Claim 11, further comprising a synthesis and purge component in a pressurizable chamber, wherein said synthesis and purge component comprises said cartridge, and wherein said seal between said at least one receiving hole and said nucleic acid synthesis column is configured so as to maintain pressure in said chamber during a purging operation to purge liquid reagent from said synthesis column.

37. The system of Claim 36, wherein said cartridge comprises a plurality of receiving holes.

38. The system of Claim 37, wherein each of said plurality of receiving holes comprises an O-ring.

39. The system of Claim 37, wherein said cartridge is configured to hold 12 or more nucleic acid synthesis columns.

40. The system of Claim 37, wherein said cartridge is configured to hold 48 or more nucleic acid synthesis columns.

41. The system of Claim 36, further comprising a reagent dispensing station, wherein said reagent dispensing station is configured to house one or more reagent reservoirs, such that reagents in said reagent reservoirs can be delivered to said cartridge.

42. The system of Claim 41, wherein said reagent dispensing station comprises a ventilation tube configured to remove gaseous emissions from said reagent dispensing station.

43. The system of Claim 42, wherein said reagent dispensing station comprises an enclosure.

44. The system of Claim 43, wherein said reagent dispensing station comprises a viewing window configured to allow visual inspection of reagent reservoirs without opening said enclosure.